

REMARKS

Claims 24-37 and 39 are pending in this application. By this Amendment, claims 1-23 and 38 are canceled, claim 24 is amended to recite that the metal layer adheres both on the filaments and between the filaments on the substrate surface, and claim 39 is amended for consistency with the language of claim 24. Further, the dependency of claims 25-29, 31 and 33 has been amended to depend from claim 24. The amendment to claim 24 clearly defines the claimed invention over the teachings of the prior art cited in the Final Rejection.

No new matter is added by this Amendment. The amendment to claim 24 is supported by the original specification at, for example, paragraph [0027], page 5, lines 17-19.

Entry of this Amendment is proper under 37 CFR §1.116 since the Amendment (a) places the application in condition for allowance (for the reasons discussed herein), (b) does not raise any new issue requiring further search and/or consideration (since the amendments amplify issues previously discussed throughout prosecution, and the amendment to claim 24 was also previously indicated in dependent claim 39), (c) does not present any additional claims without canceling a corresponding number of finally rejected claims, and (d) places the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the Final Rejection. Entry of the Amendment is thus respectfully requested.

I. Rejections Under 35 U.S.C. §103(a)

A. Lim In View of Maekawa

Claims 20-21, 23-26, 31-33, and 38-39 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,187,696 (Lim) in view of U.S. Patent No. 4,637,947 (Maekawa). This rejection is respectfully traversed.

The Patent Office acknowledged that Lim does not teach or suggest a metal layer adhered to a substrate surface, but alleges that it would have been obvious to provide the

composite sheet of Lim with a metal layer with the motivation of improving the heat insulation characteristics of the laminate as allegedly taught by Maekawa. Applicants respectfully disagree.

Lim describes a moisture vapor permeable, substantially liquid impermeable composite sheet material comprised of a fibrous substrate and a moisture vapor permeable thermoplastic film layer that may be a polyether block copolymer such as a copolymer comprised of block copolyetheresters or block copolyether amides. See the Abstract and col. 5, lines 7-11.

Maekawa discloses a heat insulation material in which a fibrous sheet material is used to support a metal. See the Abstract. At col. 2, lines 10-22, it is described that the supporting material is composed of, for example, non-woven fabrics, woven fabrics and knitted textiles. The manufacturing process can be classified into two cases: (1) one case in which the fibers are made to a fabric form together and the reflecting layer of metal is vacuum deposited or transferred onto the surface of the supporting material, and (2) a second case in which a reflecting layer is deposited on yarn surfaces while the fabric or knitted textile is kept in yarn condition and then finished yarns are knitted or woven to make the reflecting layer of the surface of the supporting material. At col. 2, line 67 to col. 3, line 8, it is described that the fibrous sheet material having such a reflecting layer as made by the foregoing methods is formed such that even in the case of vacuum deposition or in the case of transfer, the reflecting layer is formed only on one surface of the yarns constituting the fibrous sheet material and no reflecting layer is present in other portions.

Claim 24, to the contrary, requires that the metal layer adheres both on the filaments and between the filaments of the textile fabric on the substrate surface. Thus, even if one of ordinary skill in the art were to have combined the teachings of Lim and Maekawa as alleged in the Office Action, the presently claimed invention still would not have been achieved. It is

not possible to combine the substrate taught by Lim with the composite taught by Maekawa in a way which results in the composite of claim 24. Placing Maekawa's composite onto Lim's substrate inevitably results in the fact that no metal adheres between the filaments on the substrate surface and no continuous metal layer results.

By way of example, a schematic picture is given below wherein the substrate of Lim is as indicated, the circles ("O") represent the filaments in Maekawa, and the heavily shaded black line of the depiction labeled "claim 24" represents the metal layer on the filaments and between the filaments of the textile fabric on the substrate surface.



Thus, Applicants respectfully submit that one skilled in the art would not have gotten any suggestion from Lim and Maekawa to apply a metal layer on Lim's substrate which adheres both on filaments and between filaments of textile fabric on the substrate surface.

Further, Applicants respectfully submit that one of ordinary skill in the art would not have combined the teachings of Lim and Maekawa as alleged in the Office Action. As was discussed above, Lim requires the presence of a substantially non-porous substrate, whereas the teachings of Maekawa are directed exclusively to forming a non-continuous metal layer upon a porous fibrous substrate. The Examiner has failed to point out how one of ordinary skill in the art would have extracted the teachings of Maekawa in an attempt to form Maekawa's non-continuous metal layer upon the different, non-porous substrate of Lim.

If, as supposed by the Examiner, one skilled in the art would have attempted to provide the sheet material of Lim with heat insulation characteristics without destroying water-vapor-permeability, as described in the present invention, one skilled in the art would have been forced to apply a non-continuous metal film, because this is not only taught by

Maekawa but also from JP-A-11-279, 306 as substantiated in detail in the Amendment from July 28, 2003 (under I., page 11, 2nd and 3rd paragraphs). Such a non-continuous metal layer would not be a continuous metal layer as required in claim 24.

Further, were one to have somehow altered Maekawa to provide a continuous metal layer, one skilled in the art would have recognized that the application of a continuous metal layer on the sheet material of Lim inevitably results in a composite which is water-vapor impermeable and therefore, is also not the composite of the present invention.

Thus, as discussed above, Applicants respectfully submit that one of ordinary skill in the art would not have attempted to apply the metal layer from the porous substrate of Maekawa to the non-porous substrate of Lim, and further that even if one were to have done so (for example, through the use of impermissible hindsight), the resulting composite would have included a non-continuous metal layer as described in Maekawa, and thus the presently claimed invention still would not have been achieved.

Accordingly, Applicants respectfully submit that Lim and Maekawa, whether taken individually or in combination, would not have led one of ordinary skill in the art to the invention of claim 24, or any of depending claims 25-37 and 39. Reconsideration and withdrawal of this rejection are respectfully requested.

B. Horn in View of Maekawa

Claims 20-21, 23-26, 31-33, and 38-39 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,447,783 (Horn) in view of Maekawa. This rejection is respectfully traversed.

Horn discloses that vapor permeable, waterproof bicomponent film structures from a hydrophobic copolyetherester elastomer film layer and a hydrophilic copolyetherester elastomer film layer are known and often bonded to a textile material to result in a breathable, waterproof fabric. See col. 1, lines 7-13. Horn differs from the presently claimed invention

failing to (1) teach or suggest the inclusion of a metal layer adhered to the substrate surface and (2) teach or suggest a textile fabric joined to a hydrophilic flat substrate. Horn clearly teaches the requirement of a combination of a hydrophobic and hydrophilic film to form a bicomponent film substrate.

Horn requires two outer hydrophobic flat layers over a hydrophilic film layer, and teaches that a textile may be joined to one of the hydrophobic outer films. However, Horn fails to teach that the textile is to be joined to the hydrophilic film as required in the present invention. The Patent Office's comments that Horn allegedly satisfies the structure of claim 24 since claim 24 does not exclude other layers improperly ignores the required joining of layers in claim 24.

The Patent Office turned to Maekawa as allegedly suggesting inclusion of a metal layer to the Horn composite. Nothing in Maekawa remedies the deficiencies of Horn. As was discussed above, Maekawa at best teaches the use of a non-continuous metal layer upon a porous substrate, and thus would not have suggested the use of a continuous metal layer as required in the present invention.

Still further, also as discussed above, Maekawa teaches that the non-continuous metal layer must be formed upon a porous substrate, and thus one of ordinary skill in the art would not have combined the teachings of Horn and Maekawa as alleged in the Office Action. That is, the combination of Horn's substrate with the composite of Maekawa would not have suggested to one skilled in the art to apply a continuous metal layer which adheres both on the filaments and between the filaments of the textile fabric on a substrate surface because of exactly the same reasons as explained above for the combination of Lim with Maekawa.

Thus, Applicants respectfully submit that the teachings of Horn and Maekawa would not have been combined by one of ordinary skill in the art, and further submit that even if

combined, the presently claimed invention still would not have been achieved.

Reconsideration and withdrawal of this rejection are thus respectfully requested.

C. Horn and Maekawa in View of Segawa

Claims 27 and 28 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Horn and Maekawa in view of U.S. Patent No. 4,068,034 (Segawa). This rejection is respectfully traversed.

Segawa discloses a heat-insulation material obtained by adhering a metal layer to one surface of a polyvinylidene fluoride film. However, polyvinylidene fluoride is well known to be both hydrophobic and vapor impermeable. As such, Segawa does not at all teach or suggest a composite that is heat-reflecting and water-vapor-permeable, and that exhibits a hydrophilic substrate. Moreover, nothing in Segawa remedies the extensive deficiencies of Horn and Maekawa discussed above.

For the foregoing reasons, Applicants respectfully submit that nothing in Horn, Maekawa and Segawa would have led one of ordinary skill in the art to the presently claimed invention. Reconsideration and withdrawal of this rejection are respectfully requested.

D. Horn in View of Maekawa and Further in View of Lim

Claims 34-36 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Horn in view of Maekawa and further in view of Lim. Lim was relied upon as allegedly suggesting the area density and thickness as recited in claims 34 and 36.

The deficiencies of Horn, Maekawa and Lim were all extensively discussed above. Applicants respectfully submit that one of ordinary skill in the art would not have combined the teachings of these references, and moreover that even if combined, one of ordinary skill in the art would not have been led to the presently claimed invention. That is, Lim remedies none of the deficiencies of Horn and Maekawa discussed above.

For the foregoing reasons, Applicants respectfully submit that none of Horn, Maekawa and Lim teach or suggest the presently claimed invention. Reconsideration and withdrawal of this rejection are respectfully requested.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 24-37, and 39 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

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